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Behavior: an Introduction to Comparative Psychology. By JOHN B. WATSON. New York, Henry Holt and Company, 1914.—pp. xii, 439.

Professor Watson's book will perhaps find its greatest usefulness as a program of research. Its second chapter, entitled "Some Problems Enumerated," offers suggestions for experimental work which, carried out, will do much to justify 'Behaviorism' as a methodological postulate. One is the more willing to admit this because, as anything more than a convenient delimitation of a field of study, Behaviorism is so defenceless that it seems unkind to attack it.

The other chapters of the book include one on "Apparatus and Methods"; two on instinct, with a very clear and interesting presentation of the existing state of opinion regarding the origin of instinct; one on "The Experimental Study of Habit Formation," with an excellent summary, which however includes no work on invertebrates, of recent work on animal learning; chapters on "The Fixation of Arcs in Habit," on "The Abridgement of the Learning Process" (by imitation and special training methods); on "The Limits of Training in Animals," with a discussion of the Elberfeld horses and other gifted animals; and on "Man and Beast." The book concludes with four chapters on sensory discrimination, based entirely on experiments with vertebrates.

Of the various detailed points raised for discussion in these chapters, we have space to mention one only. The treatment of the fixation of habit arcs attempts to get on without assuming any influence of pleasantness or unpleasantness in learning: the successful act is 'stamped in' and the unsuccessful ones are 'stamped out,' not because of agreeable or disagreeable consequences, but on the principles of frequency and recency, the successful movement being more frequently performed than the unsuccessful ones, and being the last movement performed in a given series. These principles, it may however be said in criticism, apply chiefly to that type of learning which involves a very slow dropping off of useless movements. The rapid type which occurs where strong unpleasantness is involved, as for instance the quick learning of Schaeffer's frogs to discriminate edible from inedible substances, seems to be due to the consequences of the acts. Watson's unwillingness to allow that unpleasant consequences can be influential in learning is apparently owing to a belief that the unpleasantness or pleasantness would have to operate as psychic factors: it is perfectly possible, however, to remain true to behaviorism and assert that the consequences operate through the withdrawing or seeking reactions that they involve.

The readers of this *Review* will be more interested in a consideration of the author's general behavioristic position than in criticism of details of exposition and interpretation. This position is, briefly, that psychology should wholly abandon introspection and confine itself to the study of movements. There seem to be several possible developments of this general point of view. In the first place, one may take the ground that there exist two fields for investigation, that of conscious states, to be studied through introspection, and that of external behavior, to be studied through external observation. Of these one may choose the latter as the more attractive. The easier field it certainly is: to some people, however, the conscious experience of man or animal will remain more interesting. It may be practically more important to know what a creature will do than how he will feel about it, but some of us have an incurable and disinterested curiosity to investigate his inner life. The only criticism though, which can fairly be made on the person who chooses behavior as his field of study, is that it would seem more appropriate for him not to call himself a psychologist.

That he does, in Mr. Watson's case, call himself a psychologist is due to the fact that he goes further than the position just described and denies the right of the true psychologist to exist. Here, again, such a denial might be made on two grounds. It might be urged that while there is a real domain of psychic phenomena, a real inner aspect to behavior, no scientific method for investigating it can be devised; that introspection is a failure and that no other method is thinkable. This position, however, cannot but involve a challenge to the scientific spirit. To confess that there exists a department of genuine phenomena, for the study of which the human mind is utterly unable to devise a method, is humiliating indeed. To avoid making such a confession, Professor Watson is really driven to the extremity of denying that there exists any inner or conscious aspect to behavior whatever, or at least that this aspect consists of nothing but kinaesthetic sensations.

The two phenomena that may be appealed to, the author thinks, as giving evidence against his position are the affective processes and the image. The former he interprets as instinctive forms of behavior, giving himself unnecessary pains here, one would fancy, since all psychologists would admit that they have a well-marked behavior or movement aspect, though not so many would agree to the Freudian contention, made by Professor Watson, that all emotions are derived from sex behavior. As for the image, it is reducible, he holds, to

slight movements of the muscles concerned with language. Here again, one would willingly admit that the image has always a motor aspect, and that language processes form an important part, though by no means the whole, of that effect. But to admit that affection and the image involve behavior is a long way from saying that they are nothing but behavior, and that one's world of imagery is a world of speech habits. It is worth noting that introspection must have led Mr. Watson to the conclusion that his mental imagery consists in kinaesthetic sensations mainly from his vocal apparatus. We are not justified in saying that it was bad introspection on his part: some minds may indeed be so poorly furnished with certain elements of enjoyment that their possessors live in a world divested of the glow of inner colors and the harmony of inner sounds. But the more fortunately endowed will reproach them for making their individual limitations the universal law.

The logical outcome of this position will clearly be, not only that "there are no centrally initiated processes," but that there are no peripherally initiated conscious processes except kinaesthetic ones. We are not aware of red as red, but if we are aware at all, we feel only the sensations resulting from our movements made in response to ether vibrations of a certain wave length. We do not consciously experience the peculiar *quale* of the smell of violets; we experience only the sensations of our own deepened breathing and of articulation of the word 'violets' under the influence of the vaporous stimulus. If we can reduce all conscious experience to kinaesthetic sensations resulting from behavior, it may indeed be hoped that methods of observing behavior will, on being fully perfected, enable us to record the movements and cast aside their accompanying kinaesthetic sensations as worthless for scientific purposes. But once allow that a human being can experience a sensation of color or of taste or of anything except his own movements, and you have admitted the existence of a phenomenon not to be expressed in behavioristic terms. Hence the behaviorist must logically hold that he is a being not only incapable of recalling sights and sounds in a world of mental imagery, but of consciously experiencing the colors and sounds in the world about him.

It is not necessary to oppose actively such a theory as this: it will fall to nothing of its own accord. There will remain the possibility of working on problems of behavior and problems of consciousness, side by side, with mutual helpfulness; and there will remain our cordial appreciation of the clear envisagement of experimental tasks and in-

genious devising of methods which make Professor Watson so fruitful a worker.

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The Ego and its Place in the World. By CHARLES GRAY SHAW. New York, The MacMillan Company, 1913—pp. xii, 523.

This work is a treatise on Metaphysics. Its fundamental thesis is the reality of the human Ego as realizing itself step by step through a process of self-affirmation which at once makes it more of a self and brings it into more universal relations with the world-order. The three principal stages of this process are; *Phenomenality*, in which the Ego is a centre for self-experience, and which finds its fullest realization in the aesthetic experience, by which the Ego reflects into itself and enjoys the whole senso-spatial order; *Activity*, in which the Ego through volition interacts with, and thus enters into vital and significant relations with the world, which, in turn, is thus known as an immanent causal order or World-Will; and *Substantiality*, in which, through intellectual activity, the Ego completely finds itself in contemplative unity with the World-Whole or Substance of reality. Corresponding to and embodying these three stages of the Ego's progress in self-affirmation and self-realization are respectively the *aesthetic*, the *ethical*, and the *religious life*. In the aesthetic experience the Ego seems passively to take up the sense-world into itself, but even this seeming passivity involves some self-activity and self-affirmation. "The artistic endeavour is none other than a form of ontological striving wherein the human spirit seeks the real in its most obvious guise, that of sense" (p. 403). In the ethical striving the self wills to mould the world to the fashion of its own desires and valuations and thus comes to closer quarters with the activistic nature of reality. In religion self-affirmation is completed through transcendence of the empirical world-order and union with the substantial, immanent, and universal Ground of causal activity.

The writer criticises realism and pragmatism; the former for its failure to recognize the active function of the self in the constitution of experience, the latter for its over-emphasis of the social and the utilitarian as criteria of truth, conduct, and reality. Idealism and rationalism he criticises for their failure to give the Ego a content or central position in reality. They make experience depend on the Ego and then treat the latter as an empty form. His own standpoint he calls intellectualistic. The intellect is the supreme phase in the activity of the Ego, and through it the world-whole is apprehended.